

The role of the main environmental NGOs in the spread of “Ecosystem services” notion and PES-instruments: a Costa Rica, Madagascar, and France comparison¹

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The paper deals with the role of environmental big NGOs specialized in conservation (BINGOs) in the diffusion of the concept of "ecosystem services" (ES) and Payment for Environmental Services (PES)-instruments (Wunder 2005) in Costa Rica, Madagascar, and France. Current literature on global environmental politics largely considers NGO influence implicit and unproblematic (Betsill and Corell 2001). For Keck and Sikkink (Keck and Sikkink 1998), advocacy coalitions foster the implementation of norms by putting pressure on actors to adopt new policies. So, for them, non-state actors play a crucial role in the internationalization of norms because they are brokers and translators of international norms. However these approaches pass over the importance of national contexts (social, economic and political). Furthermore, the emergence of new international norms is not only the result of strategies of these NGOs but is also the result of a balance of power between foreign actors (bilateral or multilateral Donors and NGOs) and States.

Responding to several weaknesses in this literature (Betsill and Corell 2001), we use the literature on Policy Transfer Studies (PTS). It shows that policy entrepreneurs are “public entrepreneurs who, from outside the formal government, introduce, translate and help implement new ideas into public practice” (Roberts and King 1991), and these can intervene between different countries and also between the international and national levels (Dolowitz and Marsh 1996, Dolowitz and Marsh 2001).

Since few years, lots of initiatives are emerging around the world, claiming to ES approach and PES instruments. The comparison and analysis of the diffusion of ES concept and PES instruments in different countries seems then very pertinent to analyze such transfer of international norms. We identified 3 contrasted contexts regarding the development of ES concept and PES instrument, the role of BINGOs and the transfer modalities: Costa Rica, Madagascar and France. These three countries show also a contrasted situation regarding their national capacity and autonomy to develop public policies and public policies instruments. On one hand, in Costa Rica, the development of PES occurs early (1997), and is the result of a proactive policy of the State, and was carried by national actors to achieve national and sectoral (forestry) objectives (Le Coq et al. 2010, Legrand et al. 2010). NGOs have just played a peripheral role in this process but mobilized the Costa Rican experience to

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promote PES-instrument in other countries. On the other hand, in Madagascar, an island classified as biodiversity hotspots, NGOs became key actors in the production and implementation of biodiversity conservation instruments in a context of disintegration of the Malagasy State. Thus NGOs are implementing PES, which allowed them to carry on the development of oldest tools for which funding were unstable (Méral et al. 2011). Finally, in France, the development of the ES notion arose much later. The notion effectively appeared after the Millennium Ecosystem Assessment's (MA) report in 2005 (Hrabanski 2011). BINGOs located in France seem to have been key players in the diffusion of the ES concept in this country. The ES approach enabled them to in-depth renew their militant activities, and offered new opportunities to enlarge their participation to public policies of new sector, such as agriculture, from which they were previously excluded.

We put forward the hypothesis that environmental NGOs, and in particular Big NGOs (BINGOS), including Conservation International (CI), World Wide Fund for nature (WWF), TNC (The Nature Conservancy) and WCS (Wildlife Conservation Society), are some policy entrepreneurs who have played a key role worldwide in the spreading of ES concept and PES-instruments.

In this regard, the paper will give a special attention to the distinction suggested by D. Stone among "soft transfer", i.e. the transfer of public policies and standards of knowledge as ES concept, and "hard transfer" concerning instruments and practices of public policy (Stone 2004) like PES-instruments, in order to distinct the different role played by BINGOS as "public entrepreneur". How are involved these BINGOs in the transfer of ES concept and in the development of PES instruments? Why and under what conditions the BINGOs are becoming public brokers? What are they precisely transferring? Despite the multiple forms of BINGOS intervention, do they contribute to find sustainable financing mechanisms for conservation in spreading ES concept and PES-instrument, and more generally market based instruments (MBI)?

To answer these questions, we first analyze the weight of BINGOs in each national environmental policy and their relative powers, in adapting the framework proposed by Jörgens et Kern et al (Jörgens 2004, Kern, Jörgens and Jänicke 2001). Then we study the national capacities for action and the demand for model solutions in the three countries in connection with the role of the different NGOs. Finally we present the transfer and the role of the BINGOs in international policy transfer. Finally, we expose the result of this comparison.

1-Methodological framework to compare four BINGOS

1.1 What is a BINGO?

BINGO's analysis needs an accurate methodological framework. The first problem concerns the term of BINGO. We focus here on a specific type of NGOs: the main international NGOs specialized in conservation. Thus, since the 1990s, the implementation of nature reserves in

the world takes place under the leadership of one of the members of an oligopoly (Adams 2004) composed of IUCN (International Union for Conservation of Nature), WCS, WWF, TNC and CI. These five organizations cover various realities. We chose to focus on four of them: WWF, CI, WCS and TNC, and not to analyze precisely the role of IUCN because IUCN is an hybrid NGO : while IUCN is a international conservationist network, it is also an organization that brings together international organizations, States and national and international NGOs, and plays a role similar as a United Nation organization without its statutes (Dumoulin and Rodary 2005). However, in choosing to focus on CI, TNC, WCS and WWF we do not postulate the homogeneity of these four organizations. Their places, historical context of creation and ideological foundations greatly differ. Nevertheless, their organizational structures are close, the four are part of the conservation movement, and they are partner organizations of the United Nations: so they are involved in a reformist dynamic (unlike Greenpeace or Friends of the Earth which are more protesters). This first methodological precision made, we have to note that the four BINGOs may interact with other conservation organizations research centers, think tanks, hybrid organisms which are not decisive in our analysis but also participated in the diffusion of the notion of ES and PES-instruments. A last methodological problem concerns the scale of analysis. International BINGOs studied are involved at several levels (international, national, local). Of course, a researcher who analyzes the role of WWF in international forums will not necessarily obtain the same conclusions than an anthropologist observing the action on the ground of the same NGO. The originality of our approach can overcome these difficulties: in adopting a vision of multi-level strategies of NGOs at the international and national levels the purpose is not to compare the discourse of international NGOs and their local practices, but to understand how their implementation at different levels gives them different roles of public policy entrepreneurs. For this, before analyzing the role of NGOs in the four countries studied, we have to briefly present these four BINGOs and analyze how at the international level, they have integrated ES concept and PES-instrument in their political agenda and strategies for conservation.

1.2 Four BINGOS, four different stories

WCS is the oldest organization created in 1895 in order to help the American bison recover on the Western Plains. Focusing on big animal, WCS manage 5 zoos in New York City and now widespread conservation around the world. The Nature Conservancy (TNC) is an organization founded in 1950 and is principally engaged in fund raising activities for the purchase of land in the United States, in order to create areas of nature conservation. Now TNC is involved in lots of countries and controls the world's largest network of private protected areas. Conservation International (CI) was formed in 1987 when the leaders of the Latin American office of TNC decided to quit it to form their own organizations. Finally, since its creation in 1961, WWF pursues explicit goals: a search for funding and a truly international implementation, with projects primarily at the local level and steered by the North. In the sixties, other NGOs are created with the same objectives of financial efficiency to develop conservation. If some authors show that there's some split between the NGOs

which are in Washington (WCS, CI, TNC) and NGOs which are in Gland in Switzerland (UICN and WWF), all of these NGOs work with some firms, as the composition of their board shows it.

These four supranational organizations have developed identification strategies to prioritize conservation areas (Hot spots of CI, the ecoregions of WWF or the portfolios for TNC...) (Adams 2004). These identification strategies are coupled to a certain geographical distribution: WCS starts in USA but is now present in 60 countries; TNC is still mainly located in the United States even if it is present today in 28 countries; CI has started in Latin America and has expanded his activities to include Africa and Asia and is today represented in over 30 countries. As WCS, CI is specialized in hot spots of biodiversity. Finally, WWF counts 31 national WWF offices in the North and 24 regional offices in the South (Dumoulin and Rodary 2005).

These BINGOs are so long invested in nature conservation. In the 1980s, with the invention of "biodiversity"², the concept offers them a great opportunity to legitimize their worldwide political deployment strategies, in a context of global governance. Since Rio 92 and the signature of the Convention on Biological Diversity (CBD), the issue of biodiversity has emerged on the global political agenda, followed by new policy instruments. In that way, PES program which emerged in Costa Rica in a particular national context in 1996 has become famous as it was illustrating a new form of conservation instrument: market based instrument (MBI). A few years later, brought to media attention by the MA in 2005, the topic of ecosystem services, ecological services, or environmental services (ES) recently became the main reference for international environmental policies (broadly including forest policy, agro-environmental measures, conservation policies etc.). The MA shows that the nature provides services and these services can be quantified and monetized. So, two relatively independent processes led to the emergence of the ES concept (Pesche et al.): whereas ES concept is closely linked to a desire to attract official attention to the human pressure threats to ecosystems, PES concept seems rather to have stemmed from a concern to ensure funding for conservation in tropical countries over the long term (Landell-Mills and Porras 2002, Wunder 2005). In the past few years those two concepts have gradually converged, apparently thanks to a shared desire to translate them into operational form of public policy instruments. Some BINGOS are involved in these dynamics and more generally in MBI. However, the BINGOS appropriate theses concepts differently, as well as they use it differently in their international and national strategies. By analyzing the four BINGOs' website, we can see their differences.

² The term of "biodiversity" was coined by Walter G. Rosen in 1985, in preparing the National Forum on Biological Diversity gathered by the National Research Council in 1986 ; the term of "biodiversity" appeared for the first time in 1988, in an American entomologist's publication E.O. Wilson. The word 'biodiversity' was considered more effective in terms of communication than "biological diversity".

1.3 Four strategies on ES and PES-instruments at the international level

Since 2005, the WWF's website discusses PES instruments. The WWF Macroeconomics for Sustainable Development Program Office (MPO), based in the WWF-US headquarters in Washington, DC, was created in 1991 and the program was established "to elevate the environmental dimensions in global economic and development policy and practices and to bring technical, analytical and policy advocacy skills to support WWF's field programs in their efforts to create supportive economic, political and social conditions for conservation". In that way, the MPO works at the interface of development and environment and since 2005, the program works primarily on PES. WWF published his main report in June 2006, « Payments for ecosystem services. An equitable approach for reducing poverty and conserving nature » (WWF 2006). PES is presented "as a major conservation tool" and "Today WWF is leading the way in developing PES schemes around the world ». So at the international level, WWF has invested PES approaches in different sectors. In this publication, WWF didn't used the notion of ES as in the MA, but PES concept as Wunder defined it (Wunder 2005). In addition to developing PES programs, WWF also presents itself as an NGO which is able to provide technical support in environmental policies to develop PES approaches, together with IUCN.

CI has also developed lots of PES program (128) and published his main document on PES 4 years after the WWF in 2009 "Nature provides. Ecosystem services and their benefits to humankind" . As for WWF, it's the Wunder's approach which is used. CI's work on PES have taken one of this three forms: direct payments and financial compensation, kind payment and access to resources or markets (Conservation International 2009). In that way, there are lots of similarities between WWF and CI: both are interested in PES instruments, work in similar activities, collaborate and capture the same international funding, therefore, they are in competition. Competition for funding is measured in attempts to create corporate images and scientific legitimacy. CI is presented more as an actor in the field, pragmatic and effective, specialized in concrete approaches applied to accurate sectors: water and carbon sequestration.

In a different way, TNC does not seem to have actually invested PES and ES theme at the international level. When we search PES or ES on the TNC's website, there is no reference. Nonetheless, when the request is "market", the number of results is very important. TNC develop private lands conservation (in acquiring land, with conservation easements and conservation buyers projects), so TNC seems generally more interested in other MBI as private lands conservation and incentives measures which upholds their land purchasing strategy.

Finally, WCS developed ES's approach and PES instrument later. WCS is first historically interested in animals. WCS developed some PES approaches in two directions: in forest area

(WCS and USAID 2008) and more timidly in model of farm-based eco-labeling (bamboo, coffee, honey...)(WCS 2009). WCS's initiatives in forest area is very advanced and for them the growing carbon market combined with REDD could represent an opportunity to establish a new type of forest protected area that would conserve large blocks of tropical forest through sustainable financing. However, the strategies in favor of ES have not replaced the previous strategies. Finally, while setting up some ES strategies, WCS wonders whether the trend of assigning monetary value to nature is a useful conservation tool or a risky concept.

We showed that BINGOS have developed specific strategies to foster conservation at the international level, according to their main strategies; they all four include the promotion of PES approach. In the following section, we analyze their use of the ES's notion and their involvement in PES promotion and implementation.

2- Four BINGOS in Costa Rica, Madagascar and France: their influence on environmental policies and international resources

BINGOS influence on policy-making and implementation of environmental policies varies in the three countries studied. Regardless of their national capacities, BINGOS's international resources are decisive to analyze the intervention's shape of those transfer entrepreneurs.

2.1 BINGOs in national environmental policies

In Costa Rica, the environmental awareness and the environmental policies occurred quite early in comparison with other countries of Latin America. As many development countries, Costa Rica benefited support from international cooperation, especially in the 70-80s. Nevertheless, in the late 90s, as Costa Rican economy was increasing and the regional wars were ending, the support from international donors and NGO begun to fade. Even if this support has been concentrated in environmental issues since then, the direct influence of the international cooperation and international NGO in policy design has been very limited. The analysis of the process of genesis of the Payment for Environmental program (PESP) shows that it has been leaded by national actors (Le Coq et al. 2010, Legrand et al. 2010, Morilhat 2011). Indeed, the BINGOs were not involved in PESP genesis. The BINGOs has been more involved in other conservation tools such as support to parks and natural reserve. Regarding expertise, the BINGOs has only a very marginal role on the environmental issue. The history of environmental policies shows the importance of the construction of national

institutions and a national expertise in various disciplines developed in national academies³, some national associations, and the research centers⁴ where the introduction of new concepts or ideas mainly occurred through personal relationships between Costa Rican and international scholars.

Due to its important biodiversity, Madagascar experienced since the mid 80s the interventions of BINGOs involved in conservation such as WWF, CI and WCS. WWF is present in Madagascar since 1963 and impulse the actual Malagasy environmental policy. WWF implemented and supported many initiatives, such as the international conference on the nature and resources issued in Madagascar in 1970 and in 1985⁵, which led to the creation of environmental policy at the end of 80s. Since the implementation of the Environmental Plan of action (EPA) in 1990, the influence of these BINGOs is tremendous and multiform in at least three directions. Firstly, the environmental policy is funded by a consortium of donors, leaded by World Bank and USAID, its steering (definition of priority actions, logical framework, monitoring, evaluations) is the results of combined actions between Malagasy administration, the donors, and the BINGOs (Andriamahefazafy, Méral and Rakotoarijaona 2007, Duffy 2006). These organizations exert directly their influence through their participation to working groups or through lobbying through mass media on the donors. Secondly, these BINGOs are involved directly in field activities. These actions can be in line with the national planning (as for example the decentralized management, or the promotion of the biodiversity commodity chains (biodiversity channel). But NGOs also develop their own dynamic, in an independent way from the overall framework of the policy. So, in line with its own international strategy, WWF apply its concept of ecoregion, whereas CI focus more its activities to support corridors, and more recently on carbon, in accordance with its *program Conservation International's Carbon Fund*, developed in 2009 in 12 countries. The financial contribution of these BINGOs gives them strength inside the donors' consortium⁶.

Thirdly, the BINGOs also act at international level in order to plead on the Malagasy biodiversity. They act through direct lobbying on donors (Duffy, 2006), or support to the Malagasy delegation in the international conferences⁷.

³ In environmental and forestry sector, we can especially notice the role of the following faculties: biology and law in the University of Costa Rica, Biology and Ecological economic in the National university of Costa Rica, forestry engineer in the technological institute.

⁴ We can underline the role of the OTS (Organization of tropical studies) and the CATIE (Centro Agronomía tropical investigación y enseñanza) in the production of studies on environmental issues in Costa Rica.

⁵ During this conference, the prince Philip of England, co fundator of WWF, argued the Malagasy president Didier Ratsiraka using this terms « *your nation is committing environmental suicide* » (Kull, 1996, p.61)

⁶ For instance, WWF was the 5th bigger contributor in the first period of EAP (1990-1996).

⁷ For instance, on the 15 representatives of Madagascar delegation in the COP 15 of the CNUCC in Copenhagen, 5 were civil servants of different Ministries, 3 comes from para-public organisms, 3 from NGO (WWF and CI), 3 from cooperation agencies, and 2 from national organizations (a national university and a foundation).

In France, the relationships between State and BINGOS are different. If in the 1970s, environmental organizations were invited to get involved in French environmental policy (Lacroix and Zaccarini 2010), BINGOS are just one of the actors that have expertise. Some national associations such as FNE (France Nature Environnement) or FNH (Fondation Nicolas Hulot) were able to propose their own framing of environmental issues. Of course, some cooperation existed and still exists between them. All, including BINGOs such as WWF, have incorporated government's expectations and institutional logic of national public decision, for, in turn, get more influence over it. Nonetheless in the late 1990s, BINGOS thought that approaches in terms of natural assets limited their actions. The ES approach, promoted during the MEA, seemed, for them a way to renew their militant activities and especially to expand their activity areas.

In France, two BINGOs were particularly involved in the MA, WWF and IUCN. IUCN was in fact the most proactive international environmental organizations in France. IUCN alongside WWF played a key role as entrepreneurs to the transfer of the ES concept. Indeed, these two environmental organizations are at the interface between decision-making bodies, the scientific and business sector. This role of intermediary gives them a "natural" role of brokers between these different social worlds. Thus since 2000s, most of the WWF's offices in France subscribed some partnerships with firms in order to define, implement and enforce new environmental norms (Bendell 2000) promoting by this way the ES approach. Likewise, BINGOs also maintain close relations with the scientific world; integrating leading researchers in their scientific committee, allowing them to circulate the Millennium results among the French scientists and by this way, French scientists were able to adapt the outcomes for the hexagonal context. More broadly, BINGOs focused initially more on the diffusion of the ES notion than of PES instruments. For them, the ES approach allows an in-depth renewing of global framing of the environmental issue, and then a development of policy instruments.

The comparison shows that in Costa Rica, BINGOS have a moderate influence on national environmental policies and are first interested by PES instruments. In Madagascar, BINGOS are interested in PES instruments and their influence on national environmental policy is very important, as much in environmental policy-making than in the implementation. Finally, in France, the BINGOS's influence on environmental policies is moderate and the BINGOS developed the ES notion before PES-instruments.

2.2 Some BINGOS as bridges between international level and national level

BINGOs, such as CI or WWF, have promoted from the international reflection and the experience of Costa Rican PES the approach of PES in the Centro American regions and more largely in Latin America or further.

For example, CI promoted since 2005 local project to implement PES in Guatemala; WWF, in the framework of a multi-country project (Guatemala, Peru, and Indonesia) promoted PES for Hydraulic resources. Whereas these BINGOS promoted the PES schemes in different countries, the Costa Rica were not a priority for these BINGOS regarding investment or intervention. For its pioneer character and its implementation trajectory, Costa Rica is seen as a laboratory to test new solutions. Thus, in 2011, CI firmied an agreement to support the newly created “National Fund for Biodiversity” in charge of funding payment for Biodiversity PES in the OSA region. Costa Rica experience is also mobilized as a symbol of successful program of PES and to raise lessons in term of institutions and policy design. Thus, in this logic, CI appointed as vice president in charge of policies the ex-ministry of environment of Costa Rica, Carlos Manuel Rodriguez, who participates to the development and consolidation of PESP. With his knowledge on PES, he especially contributes to the diffusion of the Costa Rican experience in international forum or in the other countries where CI is present.

The development of PES in Madagascar can be explained by the strategic position of BINGO’s working in Madagascar wich are connected to the global arena. Their influence can be quoted in two different ways: (1) participation to networks of environmental economists dealing with monetary valuation of biodiversity and (2) research of sustainable funds (at international level) for environmental policy.

Firstly, the influence of BINGOs in the promotion of PES in Madagascar is the result of a long tradition of collaborations with foreign universities (mainly European and North-American universities), the Environment Department of the World Bank and the Usaid. During the 90’s, they tried to calculus total economic value through several study cases related to protected areas in Madagascar (Ferraro 2002, Kramer 1994). Gradually, the idea of services supplied by ecosystems (recreational, regulation...) was growing up. Direct payments for biodiversity conservation appeared through a programme developed by the Durell Wildlife Conservation Trust. The Durell’s experience of « conservation contracts » is viewed by the World bank and BINGOs as the first Malagasy direct payments for biodiversity conservation and the first alternative scheme to ICDP’s projects developed so far (Ferraro and Kiss 2002, Pagiola and Platais 2002a).

Secondly, the emergence of PES in Madagascar is linked to the search of new funds for sustain environmental policy. Connected to several networks in the northern countries, these BINGOs were putting into a very strategic position to catch new funds for Madagascar conservation activities. Corson (2008), for instance, has shown how these BINGOs helped Usaid (in 2003) to maintain the financial support of the American Congress to the biodiversity conservation in Madagascar.

More particularly, CI became in 2003 one of the most important BINGOs in Madagascar, due to its lobbying activities in USA. It created its own foundation “*International Conservation Caucus Foundation*”, developed closed relations with GEF and World Bank through the

Critical Ecosystems Partnership Fund and is linked to several foundations (Mc Arthur, Moore...) and international companies (for instance through the CCBA with WCS and TNC, BP, Hyundai, Intel, Kraft, etc.)

In few years, CI became one of the main actors of the environmental policy in Madagascar.

BINGOS in France are more involved in international environmental issues than national organizations. Until the publication of the MA, the ES notion was absent from the science field and from French political scene, except perhaps in some confidential circles as the National Museum of Natural History, or some BINGOs. Scientists, as well as the French science research policy, were not very supportive for an investment of the French representatives in MA. Thus, WWF and IUCN representatives have been directly involved in the politico-scientific process of the MA) writing between 2001 and 2005. International representatives of WWF or IUCN were in touch with French representatives of WWF and IUCN and this link may explain the diffusion of international norms. In France, BINGOS appear in this perspective to the forefront of the debate. Thus, each BINGOS national offices meeting were an opportunity to diffuse experiences from a variety of countries. BINGOs are embedded in a cross-border movement which supports the share of experiences, frames and instruments of public policy. On these occasions, BINGOS representatives have recognized the interest of the ES concept and PES instruments and noted the delay of the French Government on this issue. The BINGOS's representatives have developed two strategies to diffuse the ES approach. First, they decided to develop ES approach in scientific networks as for example in FRB to develop more scientific studies on this subject in France. Second, they get involved in decision-making at the national and European level. At the national level, they pushed on agricultural and environment ministries to develop ES approach and create a French Millennium. Consequently, lots of reports emerged in which BINGOS were indirectly involved (Centre d'Analyse Stratégique 2009, CREDOC 2009, SEEIDD and CGDD 2010) BINGOS intervene also at the European level and have played a key role in recent and ongoing changes (e.g. Water Framework Directive, Common Agricultural Policy, Rural and Regional development policy, the Eastern enlargement of the EU as well as the European Neighborhood Programme) which opened a window of opportunity to mainstream PES as a major conservation tool at the European level and consequently at the French level. The TEEB report in 2009 shows also that PES and ES approaches have become step by step the main references in National and European environmental policies.

3-National determinants for the ES approach and PES instruments' transfer by BINGOS

3.1 The unequal capacities of states to develop some policy instruments

The emergence of new international norms is not only the result of these BINGOS strategies. It is also the result of a power balance between foreign actors (bilateral or multilateral Donors and NGOs) and states. However, the three countries show a very contrasted

situation in terms of national capacity and autonomy to develop public policies and public policies instruments.

In Costa Rica, we have seen that BINGOS have not played a role in PESP genesis, and a very limited role in its implementation. This limitation can be attributed to the importance of the existing national experts, in relationship with international academy and research center. The limited influence of BINGOs is also due to the nature of the State and its administration. Costa Rica is characterized by a stable democratic regime that allowed the development of a functional public administration. These characteristics are rooted in a republican history marked by some singular choices such as the abolition of the army in 1947 and the orientation of the public budget toward education and health. Despite the adjustment plan of the late 80s-early 90s, the public administration is still quite developed. In particular, we can notice that in the context of adjustment plan, the State decided to develop “green” image of the country and reinforced the public administration in charge of environmental issue. It decided the creation of the MIRENEM (ministry of natural resources, energy and mine) that put together existing forestry department, national park service and wildlife administration with the energy and mine sector, creating a powerful and autonomous ministry (since it bring together environmental activity, currently seen as budget expense, and productive sector that currently seen as financial resources generator). We can also notice the continuity of the commitment of the Costa Rican governments in term of environmental orientation, with the ratification of the major international agreement, ant the declaration of the objective to be a carbon neutral country in 2021. Finally, Costa Rica experiences a rapid economic development since the 1990s thanks to a diversification of its economy toward services. With a PIB of 5627 \$US per inhabitant and a developed urban medium class, Costa Rica has capacity to finance its own policies and incentive. Thus, since its beginning, the PESP has been mainly financed by a part of the tax on hydrocarbon paid by national fuel consumer.

Madagascar, unlike many countries with high biodiversity such as Costa Rica, is characterized by a low PIB per inhabitant, 495\$US in 2008 (Morisset 2010). In this situation, the capacity of the Malagasy State to engage its own financial resources to maintain biodiversity is limited. On one hand, the Malagasy State budget is very limited as its fiscal pressure, around 11 %, is one of the lowest of the world. On the other hand, its scarce resources have to be oriented toward more stringent problem such as health, food security, education, according to the objective of the Millennium Goal Development. Thus, the expenses for the functioning of the ministry of environment represent only 0.3 % of the total expenditure dedicated to public administration (in comparison with 6-8 % for the ministry of health, around 10% for the ministry of national education,...)

With such an economic context, the Malagasy State does not have the organizational and financial capacity to monitor its environmental policy. Since the initiation of the

Environmental Plan, this policy has been always led by a donors' consortium, in terms of strategic orientation and support to environmental administration. This led to a low ownership of the instrument of environmental policy by the civil servants and officers of the national public administration. Furthermore, this low ownership is weakened by frequent institutional changes (dismantling of institution, evolution of their prerogative) following donors' evaluation (Andriamahefazafy et al. 2007)

The introduction of the ES referential is typically an importation of an international norm, relayed by the same international actors that intervene in project in the country

Moreover, the current period of policy instability is increasing the weakness of the State. A part of the resources of the State are then oriented toward the support of constitutional organisms – senate, and the internal security. . The important turn-over of the Minister of environmental (6 within 3 years) have also weakened the state capacity

This period of political instability also led to the suspension of donors' bilateral supports. Thus, the BINGOS conservation-oriented, that have not been affected by these diplomatic considerations have stayed the only partner of the World Bank and the Malagasy State. With the suspension of bilateral cooperation, the Malagasy State is very interested by alternative funding source, such as iron-ore royalties get from a Chinese consortium (Wisco) in 2010, or the funding source through PES or more generally from REDD+ mechanism

France is traditionally presented as particularly interventionist state, which has the financial, organizational, political and technical resources to develop and implement public policy. France interventionism works with a system of intermediation which allows different ways to engage stakeholders in public policy. Since the end of World War II, farmers' organizations are involved in a co-management system with the government including the Ministry of Agriculture. With the creation of the Ministry of Environment in 1971, environmental groups have also invested areas of technical expertise in a context where the Ministry of Environment sought to establish and stabilize a new public environmental action and was therefore awaiting expertise and knowledge (Berny 2009, Lascoumes 1993, Spanou 1991). This position offered and carried on to provide a strategic position for environmental organizations. Environmental organizations are part of a "political representation" rather than a "political mobilization" (Berny 2008). From this perspective, national environmental organizations and BINGOs have a routine access to the Ministry of Environment. They are able to develop ES topic. However, the influence of BINGOs faced the hegemony of farmer's organizations in the field of agricultural and rural policies. Indeed, the logic of co-management of the agricultural sector continued to exclude, until very recently, environmental organizations from agricultural issues.

In an attempt to overcome this division, environmental organizations relied on the European level. Indeed, the European Union (EU) was a key player in the legal and political

integration of ES notion in France. The Common Agriculture Policy (CAP) contributed greatly to the opening of a policy window (Kingdon 1984) for ES concept, first by introducing the notion of environment in agricultural policy (1992) and by implementing agri-environmental programs that included additional costs of compensation associated with some environmentally agricultural practices. These incentive policies pushed by the General Direction of Environment of EU and environmental organizations were then moved towards the ecoconditionality of aid (included in the CAP from 2003). In 2008, the balance of the CAP led to a shift of 18% of aid in favor of environmental objectives and of support of sustainable development in agriculture. This change consisted in a transfer of funds from the first pillar to the second pillar of the CAP. This decision corresponds to the period of opening the window of opportunity that is increasing since 2009 with the preparation of the CAP 2013. In this way, the reduction of the CAP budget could be compensated for farmers providing ES. In this context, the French government, which relies on EU to maintain the support to its farmers, needed the BINGOS' expertise on ES. This process helps gradually to reduce the division, still present in France, between agriculture and environment sector.

3.2 Some States supported the ES and PES's approaches?

In Costa Rica, the notion of ES has been mobilized very early by the actors of forestry sectors as well as actors from government (Ministry of Environment) to justify the permanence of existing economic incentives to forestry sector. Especially, in a context of gradual reduction of states budget and where existing incentives considered as subsidies were in danger due to trade negotiation agreements, ES notion and PES mechanism has been mobilize to change the paradigm of justification from a subsidy to a market mechanism (Le Coq et al. 2010, Legrand et al. 2010). By the way the definition of ES and its recognition in the forestry law and the definition of the bases for the PESP implementation were simultaneous done in the forestry law of 1996. When the PESP implementation begun in 1997, the knowledge on ES and PES was still limited to some actors; then, only some studies of monetary evaluation of ES provided by forest had been carried out in Costa Rica, and the notion was confidential at international level.

If the ES notion and PES mechanism were seen as a way to attract new funding sources (especially through carbon market), the experience has been disappointing since Costa Rican PESP does not fit with the conditionality defined in the Kyoto protocol. Nevertheless, PES mechanism has been very attractive to raise additional resources through for international funders, especially in a context of no eligibility of Costa Rica to international cooperation funds due to its level of development. Hence, in early 2000s, World Bank, Global Environmental Fund and GTZ began their contribution to the funding of the program though loans and grants. The commitment of the State of Costa Rica toward the PESP has been important as it accepted to mobilize public resources (tax on hydrocarbon) and also grants its guaranty to get World Bank loans. By the way, recognized as a pioneer program at

international level, the PES participate to the green image that Costa Rica want to develop in the international scene. This green image justified by the Costa Rican biodiversity (5% of international biodiversity) and the importance of conservation parks and reserves (28 % of the national territories) is considered by politician, since late 90s, as a motor for the development of the countries, as a source of competitiveness to sell their product and service, such as tourism that represents a main source of jobs and currency of the country.

In Madagascar, environmental preoccupation came through a package of structural adjustment plans of World Bank and from conservation NGOs like WWF who opened a Malagasy office in 1980. The domination of those actors in policy making drives toward a wilderness approach (Neumann 1998). The focus of conservation activities was mostly "pristine" forests and endemic fauna species like lemurs. ES rhetoric has been used for long in Malagasy policies as a line of argument for forest conservation, and for awareness raising process, even if no biophysical evidence was demonstrated (Serpantié 2009). If the idea that forest provides services to human well-being was broadly admitted, the transition toward PES has been a long process and a switch of representation, from intrinsic to extrinsic value of ecosystems. This idea of remuneration for nature conservation was first discussed in 1997 and the first studies on quantification of carbon and water were done around 2000. But this idea of remuneration was shocking people who were thinking of the intrinsic value of nature, and who could not accept that one needs money to be concerned by such a big issue.

Facing critical problems to durably financing biodiversity conservation, this idea of PES was finally accepted by the Malagasy world of conservation and broadens mostly with NGOs initiatives, and now through international initiatives like FCPF⁸ application or WAVES⁹ implementation. Following this strong incentive, the Malagasy government and its national agencies (like Madagascar National Parks) focus now on PES in order to find a durable way of financing their activities.

In France, the responses of the French government dealing with "problems" of biodiversity were made until 2005 only in terms of multifunctionality of agriculture and also in terms of natural assets, which have inspired the creation of natural parks¹⁰ and measures such as Natura 2000. From the Millennium, in 2005, the topic of ecosystem services, ecological services, environmental services (ES) and payments for environmental services (PES) has

⁸ Forest Carbon Partnership Facility (World Bank and international donors give funds to developing countries government to prepare REDD+ national policy)

⁹ Global Partnership for Wealth Accounting and the Valuation of Ecosystem Services, initiative responding to the Millennium Ecosystem Assessment

¹⁰ A national park is a reserve of natural or semi-natural land, declared or owned by a government, that is restricted from most development and is set aside for human recreation and environmental protection

recently become the main reference for environmental policies. So the French ministry of Environment, under pressure from NGOs and European and international organizations, has integrated quickly the subject. The ES approach allows the Ministry of Environment to enter in issues that were previously only the field of the Ministry of Agriculture. The latter, like the professional agricultural organizations, is particularly reluctant to ES and PES-type instruments. According to professional agricultural organizations, controversies remain about the legitimacy, effectiveness and fairness of this type of instrument. Similarly, although the French Ministry of Environment has an important interest in the ES approach, and is developing, some MBI in partnership with NGOs, some controversies remain regarding the marketing of biodiversity. Furthermore, the French government is part of the first European habitat banking project, the CDC Biodiversité (Caisse des dépôts et conciliation-Biodiversité), a French company subsidiary of the financial institution Caisse des Dépôts, operates in the field of biodiversity consultancy. Biodiversity offsets are an emerging market in France, where CDC Biodiversité is positioned as an actor piloting all steps of developers' compensatory actions: finding and securing lands, developing management plans, realizing development works (restoration, enhancement ...). For CDC-Biodiversité Offsets allow developers to build infrastructures or industrial projects with "no net loss" in biodiversity, as they compensate for residual impacts through an ecological project, generating biodiversity gain equivalent to the residual loss. In the same time, the French Ministry of environment belongs to international networks named BBOP (Business and Biodiversity Offsets Program) which is a partnership between companies, financial institutions, governments and civil society organizations to explore biodiversity offsets, and which comes from PES-instruments. Finally, despite these controversies, private firms are very interested in the PES instruments. With the help of the WBCSD (World business council on sustainable development) and BINGOS, French firms are even beginning to incorporate the PES approach into their business strategies. These firms are in the water, waste treatment, transport, food processing or cosmetics sectors, and are dependent on ES provided by nature. They try to create markets for biodiversity to be paid eventually for the services they participate to provide.

Today, even if there is no explicit reference to ES and PES in the texts of laws and the current agri-environmental policies, the notion of ES was introduced in the "Grenelle of the environment", a French's environmental Round table, and the notion figures prominently in discussions for the reform of the CAP in 2013. Furthermore some French agricultural policy instruments as MAE (mesures agro-environnementales) can be considered in a certain way as PES-like instruments (Aznar, Guérin and Perrier-Cornet 2007, Aznar and Perrier-Cornet 2004). Similarly, some firms and some BINGOS are developing ES approaches. So, after the initial reluctance, and despite the controversies that remain, the monetary approach to biodiversity seems now become essential in France and in Europe as evidenced by the report of the Center of strategic analysis (Centre d'Analyse Stratégique 2009) and the reports of TEEB across the EU (TEEB 2010), which was supported by BINGOS. Facing critical problems to

durably financing agri-environmental policies, this idea of ES and all instruments which are linked such as PES, offsets was finally accepted by the French government and Ministries.

The comparison shows that despite the differences between the three countries, ES approaches and PES instruments are seen as new opportunities to find a durable way of financing their conservation or agri-environmental incentives.

4- International diffusion: the BINGOS as entrepreneurs of transfer

The diffusion of ES concept and PES tools does not come from rich countries to poor countries. Our study also shows that it is not a dynamic which would come from international level to the national level. We can observe different types of diffusion, in which BINGOS have played a key role.

4.1 Costa Rica, a transmitter more than a receiver

The experience of Costa Rican PESP is transmitted to other situations according different channels. Aside the channel of the BINGOs that have used Costa Rican PES as reference in their other countries of intervention (see above), we can identify two other channels. Firstly, we can identify a « South – North – South » channel, that can take two forms: 1) an academic form, where information is broadcast through the articles published in international journals presenting or discussing the specific results of Costa Rican PESP (Castro et al. 2000, Zbinden and Lee 2005, Sánchez-Azofeifa et al. 2007, Pagiola 2008, Locatelli, Rojas and Salinas 2008, Daniels et al. 2010) or integrating Costa Rican PES in transversal analysis on PES mechanisms (Wunder 2005, Wunder 2007, Engel, Pagiola and Wunder 2008, Wunder, Engel and Pagiola 2008, Muradian et al. 2010) 2) an international “expert” form where information of PESP are presented and broadcast by international cooperation organizations, such as World Bank (Chomitz, Brenes and Constantino 1998, Pagiola, Bishop and Landell-Mills 2002, Pagiola and Platais 2002b) or international consultancy agencies, such as IIED (Rojas and Aylward 2003). These two forms can be linked as some actors can work for international organizations and participate to academic journal publication. Secondly, we can identify a “South – South” channel of transmission, through direct exchange between civil servants of Ministries of southern countries and FONAFIFO Staff either through visit in Costa Rica, or through mission from Costa Rican staff. This type of exchange has been particularly noticeable and effective with Mexico and Ecuador, since they have contributed to the design of the national PES programs in these two countries.

4.2 Madagascar, receiver of soft and hard transfer policies

Financing biodiversity conservation activities is the most important incentive in Madagascar for implementing PES programs, especially REDD+ mechanism. If protected area were shown as profitable thanks to biodiversity, ecotourism and water benefices (Carret 2003), the focus is today on carbon which is seen as an opportunity to finance one third of protected areas' annual expenses (Carret 2010).

REDD+ is now a big issue for the Malagasy conservation world who, despite of the political crisis and the unrecognized status given by the international community to the Malagasy government, wrote the R-PP, the document for the REDD+ national policy preparation (FCPF 2010). The REDD+ technical committee, composed by BINGOs, donors and government representatives (called the conservation coalition by Corson (2008), all Malagasy, fueled by REDD+ BINGOS pilot project experiences and expertise wrote this document that has been unofficially approved by FCPF members¹¹. R-PP is completely modeled by the World Bank and others donors with contents filled out by the REDD+ Technical Committee members of all submitting countries. Therefore, the framework is very strict and directs the policy making in all the developing countries implicated in this program.

Proud of being legitimized by the international environmental community (even if unofficially), this involvement of Malagasy people shows the transformation of subjectivities into what would Agrawal called "environmental subject" (Agrawal 2005). More than the hard transfer of policy already designed at the international level, the two decades of Environmental action Plan makeover environmental political elite of the country through a close partnership and coalition. They are now taking full part of the development and environmental regime, working for BINGOs, administration or bilateral cooperation. Switching from one to another institution, they built a strong network that has the capacities of understanding, integrating and implementing new concepts, new instruments and finally new policies shaped at the international level or in another country like Costa Rica.

At the end, we can conclude than BINGOs and international donors are intensely transferring, not only ideas and concepts, but also policy models and designs. By shaping the environmental policy in Madagascar, they also profoundly transformed environmental political elite's thinking. They came to be very proactive to impulse and diffuse international program into their country.

4.3 BINGOS in France: some transmission belts of ES, then MBIs

Four interdependent elements characterize the diffusion of the concept of ES in France. In France, PES instruments were not the first to be released but the notion of ES. Then, this "soft transfer" promoted the development of some instruments of public policy, as PES but

¹¹ Because of the political situation, FCPF donors do not accept that Madagascar submit officially this document to get the funds, until a recognized government leads the country.

not only. The notion of ES, as it was developed in France, has in fact opened the way more broadly to monetization of biodiversity, through to MBI instrument, despite the ambiguity surrounding this concept (Broughton and Pirard 2011).

The second element which partially explains the first one is the temporality of the spread of ES notion in France. Before the Millennium in 2005, only BINGOs operating in France and firms were mobilized on ES and PES-instruments. The French government, as many scientists, had not mobilized in favor of MA and its systemic approach (Hrabanski 2011). After the MA and the political success of the ES concept, the French government including the Ministry of Environment, will begin a process of catching up by developing and publishing research on the topic. Similarly, many scientists will invest heavily ecosystem approaches of biodiversity. Finally, from 2005, the EU will also develop this catch-up in favor of ES and MBI approach, which will facilitate more the enthusiasm of the French Government for ES and wider MBI.

The third element relates to the types of spreading of the ES notion. Dissemination of the concept in France shows that ES is not a model developed in rich countries which would then be distributed in poor countries. On the contrary, the ES approach was first implemented in developing countries such as Costa Rica and then be distributed to other northern countries, and promoted internationally through the Millennium. Experiences in developing countries will serve as benchmarks in developed countries such as France.

Finally, the fourth component emphasizes the importance of entrepreneurs of transfer of the concept. Unlike the two countries observed -Madagascar and Costa Rica-scientific networks have been either before or during the Millennium some entrepreneurs of transfer of SE approach. As noted above, before the Millennium in 2005, only BINGOs operating in France and firms were aware of ES notion. The transnational dimension of these two actors was decisive in the spread of ES approaches. BINGOS as firms are located in different countries and are more readily able to circulate ideas and instruments from one country to another. However, both actors did not play the same role. Some firms, from the 2000s, began to concretely implement approaches that deal with the monetization of biodiversity (ecological accounting, economic dependence on natural resources). Since 2005 and the publication of the MA, WBCSD member companies are strongly involved in the development of environmental tools that allow them to benefit of economic opportunities of the ES approach. If firms were very important to explain the diffusion of ES approach, BINGOS have been even more decisive. First, BINGOS thanks to their transnational dimension and proximity to the international scientific expertise arena help to circulate the ES concept in France by emphasizing its scientific dimensions and the frame of biodiversity that the concept underlies. Since the MA, BINGOs mobilized French scientists to make them aware of these approaches. On the other hand, BINGOSs are able to offer a concrete expertise in terms of instruments which claims of ES because they can observe and also implement MBI,

including PES instruments. They can benefit from the experience of their BINGOs located in other countries which have already implemented PES instruments. As precursors, BINGOs have several types of resources. They have organizational technical and political resources because they are able to develop expertise on the approach in terms of ES and can also implement some hard transfers, that is to say concrete tools through the implementation of MBI. BINGOS have accumulated these resources and giving them a decisive role alongside the French government and firms to develop implementation of an environmental policy focused on ES approach and MBI and to finance some activities in favor of biodiversity.

Conclusion

The article shows that if BINGOS develop international strategies for ES and PES instruments, the spreading of these strategies depends primarily on the national and local contexts. The historicity of environmental policies and the role of states are essential to understand how SE concept and related instruments will broaden. Similarly, the place that the political system gives to BINGOs is decisive. In this perspective, we have shown that in Costa Rica, which appears as a laboratory for global environmental policies, BINGOS were not at the origins of PES instruments but have played a central role to diffuse the model. In Madagascar, in order to sustain finances for conservation, PES-like instruments have largely been developed by BINGOS who worried for their funding. In France, it's first the ES concept which has seen widespread enthusiasm. Now, the notion seems open the door wider to the MBI mechanisms, in which the state and other actors, including firms, may develop new ways to finance environmental policies.

The article also shows that BINGOS play a key role in the diffusion of the concept and instruments because they are some bridges between the national and international level. PES implementation in Costa Rica enabled Costa Rican BINGOS to rely on this experience to demonstrate the value and the worldwide effectiveness of these approaches. In Madagascar, BINGOS are connected to international scientific networks which are in favor of a market-based approach to conservation, and fit in scientific Malagasy networks to develop these ideas. BINGOs in Madagascar are brokers who have an access to international funding. Finally in France, the French government was late on ES issue, and BINGOS were mobilized to scientists and policy makers to develop the approach.

The article also highlighted the different strategies of BINGOS at both international and national level, and also that they converge. For them, approach through ES and PES instruments and MBI are, for each of them and whatever their implantation, a way to capture new sources of funding for biodiversity conservation. This new strategy in terms of ES and PES instruments does not replace the measures that already existed. Measures overlap and create environmental policies which hybridize several types of instruments. So it is the combination of instruments that characterizes the environmental policies and not the

emergence of new instruments as such. In addition, although the approach known as MBI seems to know a certain rise in recent years, these instruments do not grow uniformly on different territories, or equally as environmental issues (Halpern 2010, Halpern and Le Galès 2011).

Finally, the article highlighted the essential role of transnational organizations including BINGOs in soft and hard transfer (Stone 2004). BINGOS play an essential role in the diffusion and implementation of a public policy's reference. This is not, however, without questioning their legitimacy, as the analysis shown in Madagascar, where BINGOs play a major role, and even an exclusive role, in the environmental policy in the island. More broadly, the analysis in terms of PTS allowed going beyond the visions in favor of transfers of public policies from the North to the South. So, we showed how this spreading is governed neither by the dynamic top / down (international / national) nor to the dynamic north / south. The analysis also pointed to a lesser extent that circulation of norms and instruments of public policy embodied in individuals who move between different institutions and who are brokers of such international references. BINGOs welcome as such regularly former members of national governments, international organizations and even firms, whose are involved in the spreading of policy instruments and cognitive systems on which they depend.

Bibliography

- Adams, W. 2004. *Against extinction. The story of conservation*. London: Earthscan.
- Agrawal, A. 2005. *Environmentality. Technologies of Government and the Making of Subjects*. Durham and London: Duke University Press.
- Andriamahefazafy, F., P. Méral & J. R. Rakotoarijaona. 2007. La planification environnementale : un outil pour le développement durable ? In *Madagascar face aux enjeux du développement durable : des politiques environnementales à l'action collective locale*, eds. C. Chaboud, G. Froger, P. Méral & J. C. Deberre, 23-49. Paris: Karthala.
- Aznar, O., M. Guérin & P. Perrier-Cornet (2007) Agricultures de services, services environnementaux et politiques publiques : éléments d'analyse économique. *Revue d'économie régionale et urbaine*, 4, 573-587.
- Aznar, O. & P. Perrier-Cornet (2004) The production of environmental services in rural areas: institutional sectors and proximities. *International Journal of Sustainable Development*, 7, 257 - 272.
- Bendell, J. 2000. *Terms of Endearment: Business, NGOs and Sustainable Development*. Sheffield: Greenleaf Publishing.
- Berny, N. (2008) Le lobbying des ONG internationales d'environnement à Bruxelles. *Revue française de science politique*, 58, 97-121.
- (2009) Mastering National Contextual Challenges: The Institutionalisation of LPO and Greenpeace France Compared. *Environmental Politics*, 18, 371-390.
- Betsill, M. M. & E. Corell (2001) NGO Influence in International Environmental Negotiations: A Framework for Analysis. *Global Environmental Politics*, 1, 65-85.
- Broughton, E. & R. Pirard (2011) What's in a name? Market-based instruments for biodiversity. *Health and Environment reports*, 8.

- Carret, J.-C., Bienvenu Rajaonson, Paul Jean Feno, Jurg Brand. 2010. L'environnement à Madagascar : un atout à préserver, des enjeux à maîtriser. In *Madagascar Policy Notes*, ed. Banque Mondiale. Washington.
- Carret, J.-C., Loyer D. 2003. *Comment financer durablement les aires protégées à Madagascar? Apport de l'analyse économique*. Paris AFD Editions.
- Castro, R., F. Tattenbach, L. Gamze & N. Olson (2000) The Costa Rica, Experience with Market Instruments to Mitigate Climate Change and Conserve Biodiversity. *Environmental Monitoring and Assessment*, 61, 75-92.
- Centre d'Analyse Stratégique. 2009. *L'approche économique de la biodiversité et des services liés aux écosystèmes. rapports et documents CAS*.
- Chomitz, K. M., E. Brenes & L. Constantino. 1998. *Financing Environmental Services: The Costa Rican Experience and Its Implications*. Washington: World Bank.
- Conservation International. 2009. *Nature provides. Ecosystem services and their benefits to humankind*. Arlington, USA.
- Corson, C. 2008. Mapping the Development Machine: The U.S. Agency for International Development's Biodiversity Conservation Agenda in Madagascar. In *Environmental Science, Policy and Management*, 409. University of California, Berkeley.
- CREDOC, B., Asconit Consultants, Pareto. 2009. *Étude exploratoire pour une évaluation des services rendus par les écosystèmes en France, application du Millennium Ecosystem Assessment à la France*. étude conduite à la demande du Ministère de l'Ecologie, de l'Energie, du Développement durable et de la Mer en charge des technologies vertes et des négociations sur le climat (MEEDDM).
- Daniels, A., K. Bastad, V. Esposito, A. Moulaert & C. M. Rodriguez (2010) Understanding the impacts of Costa Rica's PES: Are we asking the right questions? *Ecological Economics*, 69, 2116-2126.
- Dolowitz, D. & D. Marsh (1996) Who learns from whom: A review of the Policy Transfer Literature. *Political Studies*, 44 (3).
- (2001) Learning from Abroad : the Role of Policy Transfer in Contemporary Policy Making. *Governance, an International Journal of Policy and Administration*, 13, 5-24.
- Duffy, R. (2006) Non-governmental organisations and governance states: The impact of transnational environmental management networks in Madagascar. *Environmental Politics*, 15, 731-749.
- Dumoulin, D. & E. Rodary. 2005. Les ONG, au centre du secteur mondial de la conservation de la biodiversité. In *Représenter la nature? ONG et biodiversité*, ed. C. Aubertin. Paris: IRD.
- Engel, S., S. Pagiola & S. Wunder (2008) Ecological Economics. *Designing payments for environmental services in theory and practice: An overview of the issues*, 65, 663-674.
- FCPF. 2010. Proposition des mesures pour l'état de préparation (R-PP). Madagascar. 122. Fond de partenariat pour le carbone forestier Banque Mondiale.
- Ferraro, P. J. (2002) The local costs of establishing protected areas in low-income nations: Ranomafana National Park, Madagascar. *Ecological Economics*, 43, 261-275.
- Ferraro, P. J. & A. Kiss (2002) ECOLOGY: Direct Payments to Conserve Biodiversity. *Science*, 298, 1718-1719.
- Halpern, C. (2010) The Politics of Environmental Policy Instruments. *West European Politics*, 33, 39-57.
- Halpern, C. & P. Le Galès (2011) Pas d'action publique autonome dans instruments propres. Analyse comparée et longitudinale des politiques environnementales et urbaines de l'Union européenne. *Revue française de science politique*, 61, 51-78.
- Hrabanski, M. 2011. Emergence et circulation de la notion de services écosystémiques en France : Influence des processus politico-scientifiques internationaux et écologisation des politiques publiques nationales. In *Ecologisation des politiques et des pratiques agricoles*. Avignon.
- Jörgens, H. 2004. Gouvernance by diffusion- Implementing global norms through cross-national imitation and learning. In *Gouvernance for sustainable development. The challenge of adapting form to function*, ed. W. Lafferty. Cheltenham Edward Elgar.

- Keck, M. E. & K. Sikkink. 1998. *Activists beyond Borders. Advocacy Networks in International politics*. Ithaca: Cornell University Press.
- Kern, K., H. Jörgens & M. Jänicke. 2001. *The diffusion of environmental policy innovations: A contribution to the globalization of environmental policy*. Berlin: Discussion Paper.
- Kingdon, J.-W. 1984. *Agendas, alternatives, and public policies*. Boston.
- Kramer, R., Sharma, N., Shyamsundar, P., Munasinghe, M., (1994) Cost and Compensation Issues in Protecting Tropical Rainforests: Case Study in Madagascar, . *Environment Department Working Paper*, No. 62.
- Kull, C. (1996) The Evolution of Conservation Efforts in Madagascar. *International Environmental Affairs*, 8 (1), 50-86.
- Lacroix, V. & E. Zaccari (2010) Quarante ans de politique environnementale en France: Evolutions, avancées, constante. *Revue française d'administration publique*, 2, 205-232.
- Landell-Mills, N. & T. Porras. 2002. *Silver bullet or fools gold? A global review of markets for forest environmental services and their impact on the poor*. London: International Institute for Environment and Development (Instruments for sustainable private sector forestry series).
- Lascombes, P. 1993. *L'éco-pouvoir. Environnements et politiques*. La Découverte.
- Le Coq, J. F., G. Froger, T. Legrand, D. Pesche & F. Saenz. 2010. Payment for environmental services program in Costa Rica: a policy process analysis perspective. In *communication présentée au 19ème annual meeting de la Southwestern Social Science Association* 33 p. Houston.
- Legrand, T., J. F. Le Coq, G. Froger & F. Saenz. 2010. *Emergence et usages de la notion de Service environnemental au Costa Rica: L'exemple du Programme de Paiement pour Services environnementaux (PPSE)*. Actes de l'atelier sur l'émergence du concept de service écosystémique/environnemental. La Grande Motte (France): Paris, ANR, Atelier Concept ANR-SERENA, 2010-02-02/2010-02-04 [Cd-Rom].
- Locatelli, B., V. Rojas & Z. Salinas (2008) Impacts of payments for environmental services on local development in northern Costa Rica: A fuzzy multi-criteria analysis. *Forest Policy and Economics*, 10, 275-285.
- Méral, P., G. Froger, F. Andriamahefazafy & A. Rabearisoa. 2011. Financing protected areas in Madagascar : new methods. In *Protected areas, sustainable land ?*, eds. C. Aubertin & E. Rodary, 87-101. Farnham: Ashgate;IRD.
- Morilhat, A. 2011. *Génésis del programa de Pago por Servicios Ambientales en Costa Rica: una revisión y análisis de la Ley Forestal* rapport de stage IEP Aix-en-Provence: CIRAD.
- Morisset, J. 2010. Madagascar, vers un agenda de relance économique. . In *policy notes*. Washington: World Bank.
- Muradian, R., E. Corbera, P. Unai, N. Kosoy & P. May (2010) Reconciling theory and practice : an alternative conceptual framework for understanding payments for environmental services. *Ecological Economics*, 69, 1245-1252.
- Neumann, R. P. 1998. *Imposing Wilderness. Struggles over Livelihood and Nature Preservation in Africa*. Berkeley: University of California Press.
- Pagiola, S. (2008) Payments for environmental services in Costa Rica. *Ecological Economics*, 65, 712-724.
- Pagiola, S., J. Bishop & N. Landell-Mills. 2002. *Selling Forest Environmental Services: Market based Mechanisms for Conservation and Development*. London: Earthscan.
- Pagiola, S. & G. Platais (2002a) Payments for Environmental Services. *Environment Strategy Notes*, World Bank, 1-4.
- . 2002b. *Payments for Environmental Services*. Washington DC: The World Bank Environment Department.
- Pesche, D., P. Méral, M. Hrabanski & M. Bonnin. *Ecosystem services: emergence of new paradigms in ecosystem economics*. to be published.
- Roberts, N. C. & P. King, J (1991) Policy Entrepreneurs: Their Activity Structure and Function in the Policy Process. *Journal of Public Administration Research and Theory*, 1, 147-175.

- Rojas, M. & B. Aylward. 2003. *What are we learning from experiences with markets for environmental services in Costa Rica? A review and critique of the literature*. London: International Institute for Environment and Development (IIED).
- Sánchez-Azofeifa, A., A. Pfaff, J. Robalino & J. Boomhower (2007) Costa Rican Payment for Environmental Services Program: Intention, Implementation and Impact. *Conservation Biology*, 21, 1165-1173.
- SEEIDD & CGDD (2010) Évaluation économique des services rendus par les zones humides. *Études & documents*, 23.
- Serpantié, G., Henckel L., Toillier A. 2009. Valorisations économiques globales vs locales des sites de conservation des forêts tropicales. Divorce ou alliance ? Le corridor Ranomafana-Andringitra. In *Colloque ASRDLF*. Clermont-Ferrand.
- Spanou, C. 1991. *Fonctionnaires et militants. L'administration des nouveaux mouvements sociaux*. Paris: l'Harmattan.
- Stone, D. (2004) Transfer Agents and Global Networks in the 'Transnationalization' of Policy. *Journal of European Public Policy*, 11.
- TEEB. 2010. *The Economics of Ecosystems and Biodiversity*.
- WCS. 2009. *Building agricultural products with ecosystem services: Case studies*. WCS.
- WCS & USAID. 2008. *Governance of the Global Carbon market: Does scale Matter?*
- Wunder, S. 2005. *Payment for environmental services: some nuts and bolts*. Bogor (Indonesia): CIFOR.
- (2007) The Efficiency of Payments for Environmental Services in Tropical Conservation. *Conservation Biology*, 21, 48-58.
- Wunder, S., S. Engel & S. Pagiola (2008) Taking stock: A comparative analysis of payments for environmental services programs in developed and developing countries. *Ecological Economics*, 65, 834-852.
- WWF. 2006. *PES. An equitable approach for reducing poverty and conserving nature*.
- Zbinden, S. & D. Lee (2005) Paying for environmental services: an analysis of participation in Costa Rica's PSA program. *World development*, 33, 255-272.